Bambauer AgLand Appraisal
Appraisals · Consultations · Market Studies

Richard M. Bambauer

4101 St Rt 105
Westport, Washington 98545

5137 N. Van Ness Boulevard
Fresno, California 93711

559.994.3356

BambauerAg@msn.com

SENT VIA ELECTRONIC MAIL

May 23, 2013

Tim Crose
Assistant Director
Pacific County Department of Community Development
1216 Robert Bush Drive
P.O. Box 68
South Bend, Washington 98586

Re: Kindred Island Soil Tests

Dear Tim:

As you requested, enclosed is a copy of our current April, 2013 soil test results on the Kindred Island Property. I am also enclosing a copy of the prior, March, 2012 soil test.

The current soil test was conducted in a similar manner as method utilized by the U.S. Army Corps of Engineers utilized during our site inspection which you attended. Sample 2 followed the same line the US Army Corp dug pits during their inspection.

The March of 2012 soil test was conducted by Pacific County NRCS which I was present. A number of core samples were taken, mixed together to arrive a test sample. The NRCS took samples at depths of 3 feet, not in the upper root zone.

A grid pattern was set up in straight lines, taking soil probe samples every 100 feet. These samples were collected in a clean bucket and mixed together. For the fields identified in samples 1, 2 and 3, a total to eight soil probe cores were mixed together to arrive at a test sample. The soil probe samples were taken at the upper 18 inches of the soils in the root zone.

Fields K4, K5, K6 and K8 were the fields primarily utilized where the large Ocean Gold trucks off-loaded shells in 2012 and 2013.

Fields K1, K2 and K3 are the fields originally utilized in 2011. These fields have been utilized by using our dump truck to off-load shells, consisting primarily of crab shell backs during crab season and shrimp in the summer months. We do not utilize the Ocean Gold trailers on these fields. A total of twelve (12) probe samples were taken at 100 foot intervals and mixed together to arrive at a sample.

The soil testing program is set up to complete bi-annual soil tests, at the beginning of April each year and in the fall, prior to heavy rains in October of each year. We will utilize the same grid program, taking a number of core samples at 100 foot intervals in the upper root zone (18 inch depths). The laboratory utilized, Dellavalle Laboratory in Fresno, California, would with of the largest agricultural produces in California. They specialize in working with large dairy operators with consulting on dairy wastewater nutrient management plans. The Eco Farms shell operation is not nearly as complicated as a dairy nutrient management plan, however, the concept is the same, to protect for over applying nutrients into the soil to protect the underlying water table. I have working with this company for some 25 years in my appraisal and real estate brokerage companies in California.

These bi-annual soil tests will demonstrate the actual agronomic rates on the property, after the cropping pattern nutrient uptake. For small grains grown, various University fertilizer guidelines indicate approximately 50 pounds of nitrogen is required for crop breakdown.

Don Tapio, WSU Farm Advisor, has indicated WSU would like to utilize a portion of the property in the fall of 2013 and spring of 2014 to plant various grains and dry beans as test plots on the property. Don Tapio has expressed an interest in some side by side comparisons on fields with and without having shells applied for the WSU studies.

I believe that by this time next year, we will have a very good handle on the true site specific agronomic rates on the various soils on the property, which will be backed up the WSU field trials as well as our own cropping history in 2013.

Our 2013 spring plantings have been delayed as a result of the interference of a number of governmental agencies which has resulted in Pacific County revoking the legal Land Application Permit. Resources have had to be utilized to defend unsubstantiated claims and acquisitions rather than planting fields.

If you have any questions, or need any additional information, please do not hesitate to call.

Sincerely,

Bambauer AgLand Appraisal

Richard M. Bambauer

RB/rb
Enclosures

cc: Faith Taylor - Eldred
Terry and Vicki Larson
Craig Holley

Exhibit "A"

March 2012 Soil Test

DATE : March 02, 2012 FAX TO CLIENT: 360/875-6280
REPORT: S3489 M
CLIENT: PACIFIC CONSERVATION DISTRICT
GROWER: BAMBAUER, RICHARD
SAMPLED: CATHY PORTER

AgSource • Cenex • Central Livestock
Agri-Check
A Division of AgSource Cooperative Services
323 Sixth St. • P.O. Box 1350 • Umatilla, OR 97882
Ph: 541-922-4894 • 800-537-1129 • Fax: 541-922-5496

SOIL ANALYSIS REPORT

Lab No.	Depth Foot	pH	S.Salt mmhos	O. M. %	P ppm	K ppm	Ca meq	Mg meq	NITROGEN NO3 #/A	NITROGEN NH4 #/A	S ppm	B ppm	Zn ppm	Mn ppm	Cu ppm	Fe ppm	CEC meq	Na meq	Total Bases	Base Sat. %	SMP Buf.pH	MOISTURE Total %	MOISTURE Avail. Inches	TKN %	Cl ppm
FIELD: FIELD 1 SOUTH OF DIKE																									
4711	1	5.0	0.04	1.7	34	49	0.8	0.6	5	10	5.7	0.2	0.9	7	0.1	124			1.5		6.5				
FIELD: FIELD 2 INSIDE DIKE																									
4712	1	5.7	0.05	2.3	53	78	2.8	0.8	7	14	4.7	0.2	1.5	8	0.1	113			3.8		5.7				
FIELD: FIELD 3																									
4713	1	5.4	0.04	2.0	11	75	1.1	0.7	4	14	5.6	0.4	0.6	9	0.2	172			2.0		6.6				
FIELD: FIELD 4 WEST OF SLOUGH																									
4714	1	6.3	0.05	0.9	76	62	3.2	0.4	3	7	5.2	0.1	0.4	2	0.2	48			3.8		7.2				
FIELD: FIELD 5																									
4715	1	5.2	0.10	4.0	8	258	3.6	4.8	8	19	24.1	0.8	1.3	20	1.6	381			9.1		5.9				


Soil Test Sample Locations
March 2, 2012
Agri-Check
P.O. Box 1350
Umatilla, OR 97882
541.922.4894
105
Field 5
Field 3
Field 2
Inside Dike
Field 4
West of Slough
Field 1
South of Dike
Kindred Island
Pomeroy Ave
Romano Ln
Oregon Trail Ln
Pine Ln
Sunset Ln
Tokeland Rd
© 2013 Google
Google earth
Imagery Date: 7/6/2012 46°43'11.70" N 123°59'38.48" W elev 8 ft eye alt 9478 ft

Exhibit "B"

April 2013 Soil Test

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Soil Analysis

1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Salt Aire Inc
PO Box 420
Grayland WA 98595
18555
50

ID:

Lab No. 185229
Sampled Date
Submitted Date 4/16/2013
Submitted by Richard Bambauer
Reported Date 4/23/2013
Location/Project
Copy To
Fax
e-mail rick@saltaireinc.com

No.	Description	% SP	units pH	dS/m EC	meq/l Ca	meq/l Mg	meq/l Na	meq/l Cl	% ESP	T/ac-6" GR	+\- Lime	lbs/ac-6" Lime	mg/l B	mg/kg NO_3-N	mg/kg PO_4-P	mg/kg K	mg/kg Acid K	mg/kg Zn	mg/kg Mn	mg/kg Fe	mg/kg Cu	% OM
	RL--->	0.50	1.0	0.01	0.1	0.1	0.1	0.1	0.1	0.1		500	0.1	1.0	2.0	2.0	40.0	0.1	0.1	0.1	0.1	0.01
	NAPT Methods--->	S1.00	S1.10	S1.20	S1.60	S1.60	S1.60	S1.40	Calc.			S2.50	S1.50	S3.10	S4.10	S5.10		S6.10	S6.10	S6.10	S6.10	S9.20
	Handbook 60--->									Hndbk 60-22d	Hndbk 60-23a						SSSA,p5 61 mod					
1	1 East	36	8.2	0.68	5.8	1.1	0.8		<0.1		+		<0.1	5	74	46		1.0	4.5	98.3	0.5	1.48
2	2 Middle	37	7.2	1.29	9.5	2.3	1.9		<0.1		++		<0.1	33	12	57		2.1	3.6	96.5	0.7	1.62
3	2 East	39	6.5	1.06	5.7	4.2	1.6		<0.1		+		<0.1	28	52	58		1.3	2.7	284	0.9	1.71
4	3 West	33	6.6	1.42	8.7	2.0	1.8		<0.1		+		<0.1	44	73	67		1.7	4.2	111	0.7	1.49

DELLAVALLE® Laboratory, Inc.
Chemists and Consultants

Report of Soil Analysis

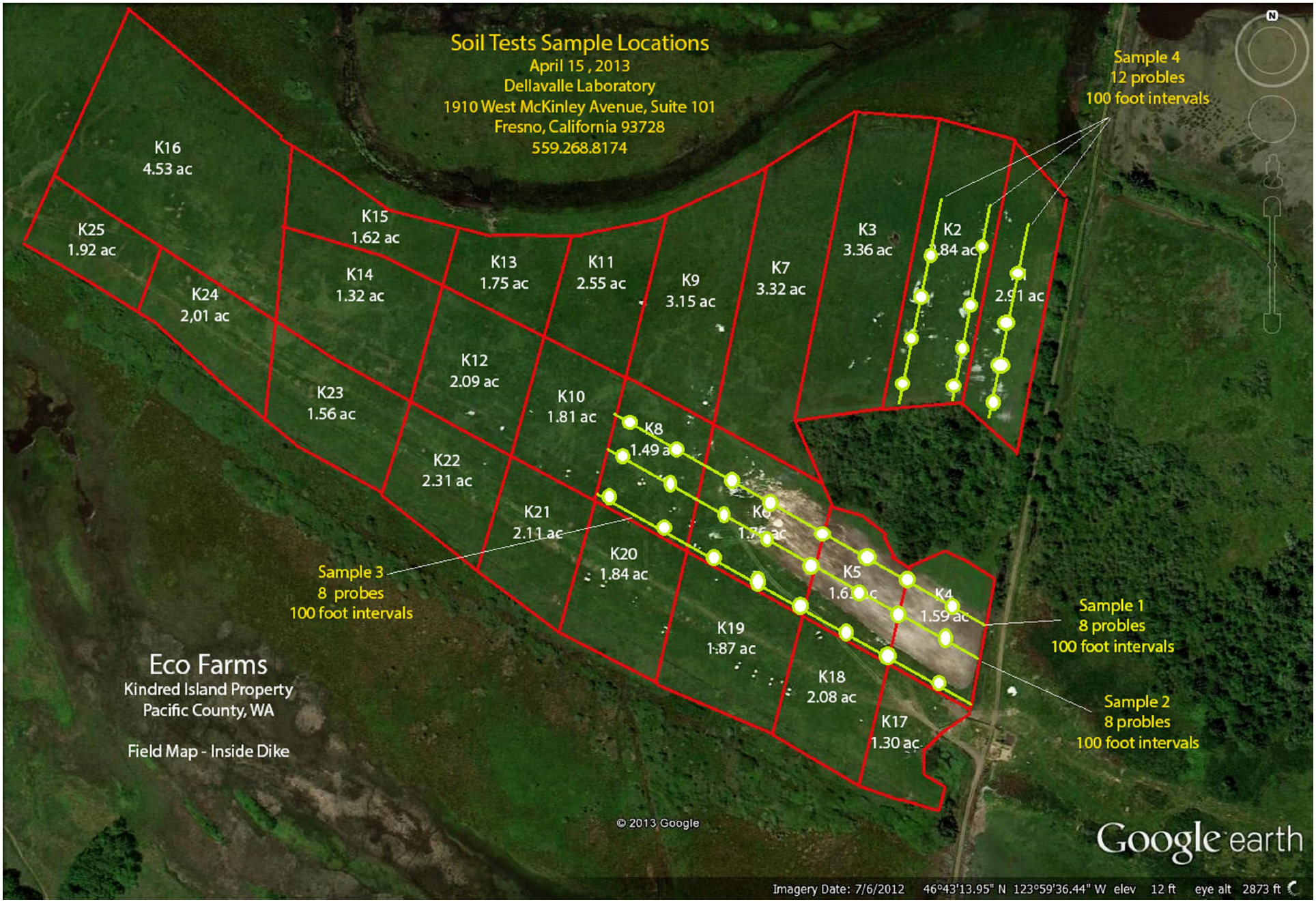
1910 W. McKinley, Suite 110, Fresno, CA 93728
FAX (559) 268-8174 - (800) 228-9896 - (559) 233-6129

Salt Aire Inc
PO Box 420
Grayland WA 98595
18555
50

ID:

Lab No. 185229
Sampled Date
Submitted Date 4/16/2013
Submitted by Richard Bambauer
Reported Date 4/23/2013
Location/Project
Copy To
Fax
e-mail rick@saltaireinc.com

No.	Description	--- Ammonium Acetate --- Extractable Cations mg/kg Ca	mg/kg Mg	mg/kg Na	--- Ammonium Acetate --- Extractable Cations meq/100g Ca	meq/100g Mg	meq/100g Na	--- Extractable Cations of Estimated CEC % K	% Ca	% Mg	% Na	Estimated meq/100g CEC	Ca/Mg Ratio	K/Mg Ratio	meq/l SO_4-S
	RL--->	1.0	6.5	5.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	NAPT Methods--->	S5.10	S5.10	S5.10	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	S1.70
	Handbook 60--->														
1	1 East	1720	81.1	18.8	8.6	0.7	<0.1	1.2	90.8	7.1	0.9	9.5	12.9	0.2	1.3
2	2 Middle	2000	108	33.5	10.0	0.9	0.1	1.3	89.4	8.0	1.3	11.2	11.2	0.2	1.6
3	2 East	1000	200	26.0	5.0	1.6	0.1	2.2	72.4	23.8	1.6	6.9	3.0	<0.1	1.8
4	3 West	983	62.9	28.4	4.9	0.5	0.1	3.0	85.8	9.1	2.2	5.7	9.5	0.3	1.1


Soil Tests Sample Locations
April 15 , 2013
Dellavalle Laboratory
1910 West McKinley Avenue, Suite 101
Fresno, California 93728
559.268.8174
Sample 4
12 probles
100 foot intervals
K16
4.53 ac
K25
1.92 ac
K24
2,01 ac
K15
1.62 ac
K14
1.32 ac
K13
1.75 ac
K11
2.55 ac
K9
3.15 ac
K7
3.32 ac
K3
3.36 ac
K2
.84 ac
2.91 ac
K12
2.09 ac
K23
1.56 ac
K10
1.81 ac
K8
1.49 a
K22
2.31 ac
K21
2.11 ac
K6
1.7 ac
K20
1.84 ac
K5
1.6 c
K4
1.59 ac
Sample 3
8 probes
100 foot intervals
Sample 1
8 probles
100 foot intervals
K19
1.87 ac
K18
2.08 ac
K17
1.30 ac
Sample 2
8 probles
100 foot intervals
Eco Farms
Kindred Island Property
Pacific County, WA
Field Map - Inside Dike
© 2013 Google
Google earth
Imagery Date: 7/6/2012 46°43'13.95" N 123°59'36.44" W elev 12 ft eye alt 2873 ft

Print | Close Window

Subject: Re: FWD: 185229 soils
From: lmount@dellavallelab.com
Date: Mon, May 06, 2013 6:44 pm
To: <rick@saltaireinc.com>

Hello Mr. Bambauer,

The conversion factor for nitrate-nitrogen (NO3-N) to pounds per acre is 2.73, so in your example it would be 13.65 lbs/ac.

Your results are only the nitrate-nitrogen portion of plant available nitrogen (PAN). There is also some ammoniacal-nitrogen (NH3-N) uptake by plants. Typically, PAN refers to the amount of nitrogen available to a plant through decomposition (mineralization) of a manure or crop residue source into NO3-N and NH3-N. In soil, bacteria convert NH3-N into NO3-N.

If you have any further questions or concerns, please let me know.

Sincerely,

Lacey Mount

Lacey L. Mount, D.P.M.

CCA#364694

PCA# 128730

559-351-2741 mobile

lmount@dellavallelab.com

Dellavalle Laboratory, Inc.

1910 W McKinley Ave Ste 110

Fresno CA 93728-1298

559-233-6129

559-268-8174 Fax

www.dellavallelab.com

Eco Farms Soils Tests
Nelson Stock Ranch
by Dellavalle Lab
April, 2013

	Nitrogen mg/kg	conversion factor	Nitorgen Pounds Per Acre	Prior Test Mar-12	Nitrogen #/ac Increase
East	5	2.73	13.65	14	-0.35
Middle	33	2.73	90.09	14	76.09
West	44	2.73	120.12	3	117.12
East - Teal Duck	28	2.73	76.44	14	62.44

Exhibit "C"

Don Tapio Emails

Print | Close Window

Subject: FW: Grains
From: "Tapio, Donald" <tapiod@wsu.edu>
Date: Fri, May 10, 2013 1:19 pm
To: "rick@saltaireinc.com" <rick@saltaireinc.com>
Attach: image001.png

From: Cogger, Craig George
Sent: Friday, May 10, 2013 11:14 AM
To: Tapio, Donald
Subject: RE: Grains

Don,

I have attached several extension bulletins that could be useful. None perfectly fit this situation, but they are useful to get us in the ballpark. The west side corn bulletin assumes a manured system. The oats bulletin is out of Idaho, because there is not one available for the west side.

I don't know if there is a yield history with these crops on the site, but since it is the first year I would set a fairly low yield goal when working through the calculations.

Just as a best judgment estimate, the wheat and oats recommendations below seem reasonable, while the corn looks much too high for our environment.

The shrimp and crab shells should have high N availability, based on an informal study we did several years ago, and it looks like a lot of N has been released already on the application site. A pre-sidedress N test for the corn would be useful to see if additional N is needed at sidedress time.

Potassium levels in the soil samples look low. I don't know if the shrimp and crab provide much K, but supplemental K will likely be needed to make best use of the N.

Craig

Silage corn, west side
http://extension.oregonstate.edu/catalog/pdf/em/em8978-e.pdf

Silage and grain corn, east side
http://www.cals.uidaho.edu/edComm/pdf/PNW/PNW0615.pdf

Winter wheat, west side
http://www.oregon.gov/ODA/PEST/docs/pdf/97_07_fg9.pdf

Oats
http://www.cals.uidaho.edu/edComm/pdf/CIS/CIS1135.pdf

Craig Cogger
WSU Puyallup
253-445-4512
http://www.puyallup.wsu.edu/soilmgmt/Default.htm

From: Tapio, Donald
Sent: Thursday, May 09, 2013 5:28 PM
To: Cogger, Craig George
Subject: FW: Grains

Craig-

Can you provide any of this requested info regarding uptake of N by cereal grains?

DOn

From: rick@saltaireinc.com [mailto:rick@saltaireinc.com]
Sent: Thursday, May 09, 2013 12:24 PM
To: Tapio, Donald; Jones, Stephen Scott
Cc: lucas.patzek@email.wsu.edu; Terry Vicki; kim@saltaireinc.com
Subject: RE: Grains

Good Morning Don:

Do you have an idea on how many acres you would be interested in test plots for fall 2013 and spring 2014 planting.

I am enclosing a copy of the most recent soil tests, on the area where we have applied a majority of the crab and shrimp shells. Based on the soil tests we have a range of applied nitrogen from shells at a low of 13.65 to high of 120 pounds per acre on approximately 20 acres. The original soil test in march of 2012 shows the nature pasture grass nitrogen levels around 14 pounds per acre.

We are looking at seeding several small fields to oats, wheat, corn and (possibly safflower if I can obtain some seed). I might run to Fresno to pick up seed for safflower if needed.

Based on cost studies I have come up with from WSU, OSU and UC Davis, I have developed a chart showing the nitrogen requirements for various crops being considered.

Can you provide your recommendations on how much nitrogen fertilizer would be required for our agronomic rate for this summer planting of the following crops which I know the seed is available. I am showing what rates I have found from various cost studies.

Oats 75#/ac N required
Wheat 120#/ac N required
Corn 350#/ac N required

I understand that the fertilizer requirement is based on a number of variables, including soil types, climate, and most especially yields.

THe small fields which recently had crab shells applied are averaging about 100#/ac of nitrogen right now.

We would like to provide to the County and Department of Ecology an estimate of the crop uptake on fields we plant now.

I am having the lab which completed our soils tests do the same.

We need to seed the fields with the highest N levels, however, we can plant only portions and leave other for fall for your test plots. We should be able to have side by side comparisons for your trials if you would like.

Let me know your thoughts.

Thanks,

Richard M. Bambauer
President
Salt Aire, Inc.
559.994.3356

Mailing Address
P.O. Box 420
Grayland, Washington 98547

Office Address:
4101 St Rt 105
Westport, Washington 98595

salt aire

> -------- Original Message --------
> Subject: RE: Grains
> From: <rick@saltaireinc.com>
> Date: Wed, May 01, 2013 3:29 pm
> To: "Tapio, Donald" <tapiod@wsu.edu>, "Jones, Stephen Scott" <joness@wsu.edu>
> Cc: "lucas.patzek@email.wsu.edu" <lucas.patzek@email.wsu.edu>, "Terry Vicki" <fvtriciarae@gmail.com>, kim@saltaireinc.com
>
> Don and Steve:

Thanks for getting back to us. We are very interested in conducting some test plots.

As you are aware, we have been applying crab and shrimp shells as organic compost on the property. I should have the current soil test any day which I will forward to you.

We need to implement a crop program to ensure we do not apply more plant available nitrogen to the soil from shells. Presently, all of the shells have been disced into the soil.

We look forward to meeting with you to discuss various options with you.

Thanks again.

Richard M. Bambauer
President
Salt Aire, Inc.
559.994.3356

Mailing Address
P.O. Box 420
Grayland, Washington 98547

Office Address:
4101 St Rt 105
Westport, Washington 98595

salt aire

-------- Original Message --------
Subject: RE: Grains
From: "Tapio, Donald" <tapiod@wsu.edu>
Date: Wed, May 01, 2013 2:49 pm
To: "Jones, Stephen Scott" <joness@wsu.edu>
Cc: "rick@saltaireinc.com" <rick@saltaireinc.com>,
"lucas.patzek@email.wsu.edu" <lucas.patzek@email.wsu.edu>

Steve-

Thanks so much for the quick response. I'll check with the farm owner to see if he is amenable to some fall and spring research plots including both cereal grains and beans.
.

Don

From: Jones, Stephen Scott
Sent: Wednesday, May 01, 2013 2:16 PM
To: Tapio, Donald
Cc: Patzek, Lucas Jan
Subject: Grains

Hi Don, we do want to get a trial in down there, it would need to be fall as we are all in already with the springs and do not have any seed for trials remaining. Can we plan for fall and next spring? We'd probably want to add some early maturing beans for next year as well, steve

Print | Close Window

Subject: RE: Grains
From: rick@saltaireinc.com
Date: Tue, May 21, 2013 2:08 pm
To: "Tapio, Donald" <tapiod@wsu.edu>, "Jones, Stephen Scott" <joness@wsu.edu>
Cc: "lucas.patzek@email.wsu.edu" <lucas.patzek@email.wsu.edu>
Attach: sigimg0

Don:

We are very interested in working with WSU on some test plots this fall and next spring.

Let me know what you will need from us.

Thanks,

Richard M. Bambauer
President
Salt Aire, Inc.
559.994.3356

Mailing Address
P.O. Box 420
Grayland, Washington 98547

Office Address:
4101 St Rt 105
Westport, Washington 98595

salt aire

> -------- Original Message --------
> Subject: RE: Grains
> From: "Tapio, Donald" <tapiod@wsu.edu>
> Date: Wed, May 01, 2013 2:49 pm
> To: "Jones, Stephen Scott" <joness@wsu.edu>
> Cc: "rick@saltaireinc.com" <rick@saltaireinc.com>,
> "lucas.patzek@email.wsu.edu" <lucas.patzek@email.wsu.edu>
>
> Steve-
>
> Thanks so much for the quick response. I'll check with the farm owner to see if he is amenable to

some fall and spring research plots including both cereal grains and beans. .

Don

From: Jones, Stephen Scott
Sent: Wednesday, May 01, 2013 2:16 PM
To: Tapio, Donald
Cc: Patzek, Lucas Jan
Subject: Grains

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